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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/558,097 | 12/06/2006 | Jun-han Kang | 29137.114.00 | 6358 |
| 30827 | 7590 | 07/08/2010 | EXAMINER | |
| MCKENNA LONG & ALDRIDGE LLP | | | BULLOCK, IN SUK C | |
| 1900 K STREET, NW | | | | |
| WASHINGTON, DC 20006 | | | ART UNIT | PAPER NUMBER |
| | | | 1797 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/558,097 | KANG ET AL. | |
| | Examiner | Art Unit | |
| | IN SUK BULLOCK | 1797 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 12 April 2010.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 2,3,6,9-11,13,15,17 and 19-26 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 6, 9, 10, 15, 17 and 19-26 is/are allowed.
 6) Claim(s) 2,3,11 and 13 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

DETAILED ACTION

Response to Amendment

Amendment to claims 2, 3, 6, 11, 13, 15, and 19-21 is acknowledged.

Cancellation of claims 4, 5, 7, 8, 12, 14, 16, and 18, is acknowledged. New claims 22-26 have been added. Thus, claims 2, 3, 6, 9-11, 13, 15, 17 and 19-26 are currently pending in this application.

The following is a new ground of rejection in response to the amendment.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 3 11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 11 provide for the use of a catalyst for hydrocarbon steam cracking, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 2, 3, 11 and 13 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process

claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 3, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,217,333 to Loblich (hereinafter “Loblich”).

Loblich discloses a composition comprising potassium magnesium phosphate (abstract). Loblich further discloses a process for producing potassium magnesium phosphate comprising reacting under aqueous conditions (a) mono or dibasic magnesium phosphate, (b) potassium chloride, and (c) an alkaline magnesium compound (col. 2, lines 46-56). The composition is dried and heated (Example 1 in col. 8).

Loblich fails to disclose a carrier for the composition.

However, it is well known in the art to employ a catalyst composition either supported or unsupported. It is also well known in the art that generally the support does not participate in chemical reactions and is mainly used for attrition resistance, stance, etc. Therefore, it would have been obvious to one skilled in the art to have modified the composition of Loblich by including a support for myriad of reasons such as attrition resistance. Further, one skilled in the art may select any number of known supports including those claimed by applicants.

It is noted claims 2 and 11 recite “catalyst is obtained by sintering.” Therefore, these claims are product-by-process claims. Where the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to the applicants to come forward with evidence establishing an unobvious

difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983).

Allowable Subject Matter

Claims 6, 9, 10, 15, 17 and 19-26 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record to Loblich fails to disclose the claimed process of making a supported KMgPO₄ catalyst comprising sintering KMgPO₄ and a carrier under 1,000-1,400 °C for 22-26 hours. With regard to the claimed steam cracking of hydrocarbons to produce ethylene and propylene employing a supported KMgPO₄ catalyst, Loblich fails to disclose employing the catalyst therein for steam cracking. Also, the previously applied prior art to Dugan fails to disclose the claimed amount of ethylene and propylene as recited in instant claims 11 and 23.

Response to Arguments

Applicants' arguments, see page 8, 3rd full paragraph through page 9, 2nd paragraph, filed 4/12/2010, with respect to claims 19-26 have been fully considered and are persuasive. The rejection of these claims has been withdrawn.

Conclusion

Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IN SUK BULLOCK whose telephone number is (571)272-5954. The examiner can normally be reached on Monday - Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/In Suk Bullock/
Primary Examiner, Art Unit 1797